**SOUNDSCAPES® Shapes**

**Aoustical Clouds**

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**Key Selection Attributes**
- Enhance acoustics in open areas
- Improve sound absorption and reduce reverberation time
- Aesthetically define spaces
- 10 flat fiberglass panels in multiple sizes and shapes
- Install individually or in groups, create your own unique design

**Typical Applications**
- Exposed structure areas
- Healthcare
- Office
- Education
- Retail
- Hospitality and retail

**Color Selection** Due to printing limitations, shades may vary from actual product.

- White (WH)
- Shell (SH)
- Pale Lemon (LM)
- Pecan (PC)
- Sky (SK)
- Moss (MS)
- Stone (SE)

**Panel Selection** Shown in finish view from below ceiling

**Nominal 4' x 4' Shapes**
- Item #5440 Square
- Item #5441 Convex
- Item #5442 Circle
- Item #5444 Hexagon
- Item #5445 Trapezoid
- Item #5446 Left Parallelogram
- Item #5447 Right Parallelogram

**Nominal 4' x 6' Shape**
- Item #5448 Small Rectangle

**Nominal 4' x 8' Shape**
- Item #5449 Large Rectangle

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**NOTE:** Special care in installation and handling must be taken with color shapes to avoid surface damage to the post-production paint finish.

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*Pictured on cover: SoundScapes® Shapes Concave and Convex panels in White and Moss*
Acoustical Performance

Sound Absorption in Sabin

The Sabin is the unit of total sound absorption provided by an object. This is the preferred metric for “space absorbers” such as clouds, canopies or baffles installed within an architectural space.

Total acoustical absorption for a suspended ceiling is calculated by multiplying the exposed surface area by the material NRC while “space absorbers” are directly measured. SoundScapes Shapes Acoustical Clouds and Canopies provide greater sound absorption than a continuous ceiling of the same surface area because the sound is absorbed from both the front and back surfaces.

The installation of clouds and canopies in a reverberant space can significantly reduce the background noise and reverberation time, enhancing speech intelligibility.

Factors that may affect the installed acoustical performance relative to the published results are:

– Size and shape of cloud
– Number of clouds and their layout
– Suspension distance below exposed deck or finished ceiling
– Location and vertical or horizontal layering of clouds
– Material selection (fiberglass clouds or mineral fiber canopies)

<table>
<thead>
<tr>
<th>Ceiling</th>
<th>No Ceiling Exposed Structure</th>
<th>SoundScapes (25% of ceiling)</th>
<th>SoundScapes (50% of ceiling)</th>
<th>Full Ultima Ceiling</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reverberation Time (RT)</td>
<td>3.4s</td>
<td>1.6s</td>
<td>1.4s</td>
<td>1.0s</td>
</tr>
<tr>
<td>RT Improvement</td>
<td>ref</td>
<td>+53%</td>
<td>+58%</td>
<td>+70%</td>
</tr>
<tr>
<td>Background Noise Reduction</td>
<td>ref</td>
<td>-1.6 dB</td>
<td>-2.0 dB</td>
<td>-2.6 dB</td>
</tr>
<tr>
<td>Total Sabin for Coverage Area</td>
<td>none</td>
<td>1248 sf x 1.25 = 1560</td>
<td>1216 sf x 1.49 = 1812</td>
<td>2400 sf x 1.25 = 3000</td>
</tr>
</tbody>
</table>

* For product information on SoundScapes Acoustical Canopies, see CS-3691 or visit armstrong.com/soundscapes. You can calculate the acoustical difference that SoundScapes make in your space by using our online Reverb Calculator Tool at armstrong.com/reverbtool

NOTE: Results based on acoustical testing of white SoundScapes Shapes Circle panels suspended 48” below the deck. The absorption is approximately 10% lower for color panels and 20% lower for direct attachment to drywall.
Installation Options

1. Individual Suspension

With individual suspension to the deck, you need the following for each type of shape:

Nominal 4’ x 4’ and 4’ x 6’ Shapes:
(1) Shape (Items 5440 through 5448)
(2) 5450 Deck Hanging Kits

Nominal 4’ x 8’ Shape:
(1) Item 5449, Large Rectangle
(3) 5450 Deck Hanging Kits

2. Individual Attachment to Drywall (or a solid surface)

With individual suspension to drywall or a solid surface, you need the following for each type of shape:

Nominal 4’ x 4’ and 4’ x 6’ Shapes:
(1) Shape (Items 5440 through 5448)
(2) 5455 Drywall Hanging Kits

Nominal 4’ x 8’ Shape:
(1) Item 5449, Large Rectangle
(3) 5455 Drywall Hanging Kits

NOTE: See Installation Instructions LA-297302 for details. If you need assistance identifying what and how many accessory kits are needed for your project, please contact TechLine at 1 877 ARMSTRONG.
Installation Options

3. Group Suspension

SoundScapes Shapes can also be installed together using a variety of group-related accessory kits. Group assemblies have been engineered for use in all seismic areas.

As an example, to install the design layout above with a minimum of 2” spacing between shapes, you would need to order:

Nominal 4’ x 4’ Shapes:
(4) Shapes (items 5440 through 5447)
(2) 5450 – Deck Hanging Kits
(1) 5451 – Grouping Frames Kit
(1) 5453 – Frame Alignment Kit
(4) 5454 – Panel Hook Kits

Design Consideration: SoundScapes Shapes maintain a natural sag that may be noticeable when installed 6” or less apart. Deflection up to 1/8” has been documented in some cases.

Installation Views

NOTE: See Installation Instructions LA-297302 for details on typical group configurations. CAD details are also available on the web at armstrong.com/shapes. Installation will require field cutting of the grouping frames. Please note: Increasing the spacing between shapes may require additional hardware. If you need assistance identifying what and how many accessory kits are needed for your project, please contact TechLine at 1 877 ARMSTRONG.
Ways You Can Suspend SoundScapes Shapes in Groups

**Grouping Ideas** — You can group shapes in unlimited combinations. Below are a few ideas made possible with standard accessory kits. Group applications always require more than one kit.

### 4-Panel Square Group Layouts
To create these kinds of groups with a minimum of 2" spacing between shapes, you need to order:

- **(4) shapes:**
  - (4) 5441
  - (4) 5442
  - (4) 5444
  - (4) 5445
  - (4) 5446
  - (4) 5447

- **(2) 5450 Deck Hanging Kits**
- **(1) 5451 Grouping Frames Kit**
- **(4) 5454 Panel Hook Kits**

### 4-Panel Linear Group Layouts
To create these kinds of groups with a minimum of 2" spacing between shapes, you need to order:

- **(4) shapes:**
  - (2) 5441
  - (4) 5442
  - (4) 5440
  - (4) 5443
  - (4) 5444
  - (4) 5445
  - (4) 5447
  - (4) 5446

- **(2) 5450 Deck Hanging Kits**
- **(1) 5451 Grouping Frames Kit**
- **(2) 5453 Frame Alignment Kits**

### 9-Panel Square Group Layouts
To create these kinds of groups with a minimum of 2" spacing between shapes, you need to order:

- **(9) shapes:**
  - (5) 5441
  - (9) 5440
  - (9) 5443
  - (5) 5440
  - (9) 5444
  - (9) 5445
  - (9) 5446
  - (9) 5447

- **(5) 5450 Deck Hanging Kits**
- **(2) 5451 Grouping Frame Kits**
- **(3) 5453 Frame Alignment Kits**
- **(9) 5454 Panel Hook Kits**

### 4-Panel Rectangular Layout
To create this group with a minimum of 2" spacing between shapes, you need to order:

- **(4) shapes:**
  - (2) 5440 & (2) 5448

- **(3) 5450 Deck Hanging Kits**
- **(1) 5451 Grouping Frame Kit**
- **(1) 5453 Frame Alignment Kit**
- **(4) 5454 Panel Hook Kits**

### 7-Panel Group Layouts
To create these groups with a minimum of 2" spacing between shapes, you need to order:

- **(7) shapes:**
  - (7) 5444 or (7) 5443

- **(5) 5450 Deck Hanging Kits**
- **(2) 5451 Grouping Frame Kits**
- **(3) 5453 Frame Alignment Kits**
- **(7) 5454 Panel Hook Kits**

* See pages 3 and 4 for installation photos.

Design Consideration: SoundScapes Shapes maintain a natural sag that may be noticeable when installed 6" or less apart. Deflection up to 1/8” has been documented in some cases.

**NOTE:** See Installation Instructions LA-297302 for details on typical group configurations. CAD details showing various spacing options depending on panel shape are also available on the web at armstrong.com/shapes. Installation will require field cutting of the grouping frames. Increasing the spacing between shapes may require additional hardware. If you need assistance identifying what and how many accessory kits are needed for your project, please contact TechLine at 1 877 ARMSTRONG.
Accessory Kits — Applications always require more than one kit. Please review your needs carefully.

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>KIT CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5450</td>
<td>Deck Hanging Kit</td>
</tr>
<tr>
<td></td>
<td>Allows for suspending individual shapes or grouping frames from deck and bottom end adjustment of height at panel or frame level.</td>
</tr>
<tr>
<td></td>
<td>(2) gripper structure anchors</td>
</tr>
<tr>
<td></td>
<td>(2) gripper structure caps</td>
</tr>
<tr>
<td></td>
<td>(2) 8’ aircraft cables</td>
</tr>
<tr>
<td></td>
<td>(2) bottom end cable adjusters</td>
</tr>
<tr>
<td></td>
<td>(2) nuts with washers</td>
</tr>
<tr>
<td>5451</td>
<td>Grouping Frames</td>
</tr>
<tr>
<td></td>
<td>Suspension frames used to group panels together</td>
</tr>
<tr>
<td></td>
<td>(4) suspension frames, 12’ long, black</td>
</tr>
<tr>
<td>5452</td>
<td>Frame Splice Kit</td>
</tr>
<tr>
<td></td>
<td>Connects group suspension frames for longer runs (&gt; 12 feet)</td>
</tr>
<tr>
<td></td>
<td>(2) group frame connectors, 10” long, black</td>
</tr>
<tr>
<td></td>
<td>(4) bolts with washers</td>
</tr>
<tr>
<td></td>
<td>(4) nuts</td>
</tr>
<tr>
<td>5453</td>
<td>Frame Alignment Kit</td>
</tr>
<tr>
<td></td>
<td>For use with group suspension frames</td>
</tr>
<tr>
<td></td>
<td>(4) frame alignment spacers, clear plastic</td>
</tr>
<tr>
<td></td>
<td>(4) bolts</td>
</tr>
<tr>
<td></td>
<td>(4) nuts with washers</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEM #</th>
<th>KIT CONTENTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>5454</td>
<td>Panel Hook Kit</td>
</tr>
<tr>
<td></td>
<td>For use with group frames, (one kit per all panels except item 5449, Large Rectangle, which requires 2 kits)</td>
</tr>
<tr>
<td></td>
<td>(2) 4-1/2” high panel hooks, black</td>
</tr>
<tr>
<td></td>
<td>(2) 3-1/2” high panel hooks, black</td>
</tr>
<tr>
<td></td>
<td>(8) bolts</td>
</tr>
<tr>
<td>5455</td>
<td>Drywall Hanging Kit</td>
</tr>
<tr>
<td></td>
<td>For individual panel attachment to drywall</td>
</tr>
<tr>
<td></td>
<td>(2) drywall clip assemblies</td>
</tr>
<tr>
<td></td>
<td>(2) shoulder bolts</td>
</tr>
<tr>
<td>625530</td>
<td>Extended Hanging Cables</td>
</tr>
<tr>
<td></td>
<td>For use with deck hanging kit when longer cables are needed</td>
</tr>
<tr>
<td></td>
<td>(4) 30’ aircraft cables</td>
</tr>
</tbody>
</table>

7006   | Escutcheon Kit |
|        | Used when hanging panels below an existing ceiling |
|        | (2) collars with set screws |
|        | (2) 2” escutcheons |

NOTE: If you need assistance identifying what and how many accessory kits are needed for your project, please contact TechLine at 1 877 ARMSTRONG.

Accessory kit hardware is attached to panels via the metal extrusion or corner brackets on the back of each panel. These diagrams show the location of extrusions and corner brackets in the back of each size panel. See Installation Instructions LA-297302 for more details.
Visual Selection

<table>
<thead>
<tr>
<th>Item Number</th>
<th>Description</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>5440_ _</td>
<td>Square</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5441_ _</td>
<td>Convex</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5442_ _</td>
<td>Concave</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5443_ _</td>
<td>Circle</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5444_ _</td>
<td>Hexagon</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5445_ _</td>
<td>Trapezoid</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5446_ _</td>
<td>Left Parallelogram</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5447_ _</td>
<td>Right Parallelogram</td>
<td>Nominal 4’ x 4’ x 7/8″</td>
</tr>
<tr>
<td>5448_ _</td>
<td>Small Rectangle</td>
<td>Nominal 4’ x 6’ x 7/8″</td>
</tr>
<tr>
<td>5449_ _</td>
<td>Large Rectangle</td>
<td>Nominal 4’ x 8’ x 7/8″</td>
</tr>
</tbody>
</table>

* Add 2-letter color suffix to item number when specifying or ordering. Panel item number ex: 5440WH for White.

Physical Data

Material
7/8” thick Fiberglass with DuraBrite scrim on face and sides.

Surface Finish
DuraBrite with factory-applied paint on face and sides. Standard white has energy-saving, high light-reflective finish (LR 0.90). Back of panel is unfinished with embedded metal extrusions.

Panel Weight
0.63 lbs/SF

Design Consideration
SoundScapes Shapes maintain a natural sag that may not be noticeable when installed 6” or less apart. Deflection up to 1/8” has been documented in some cases.

SoundScapes Shapes should be installed on no more than a 5º slope.

Fire Performance
SoundScapes Shapes panel material is ASTM E84 Class A: Flame Spread 25 or under and Smoke Developed 50 or less. SoundScapes Shapes, as with other architectural features located in the ceiling plane, may obstruct or skew the existing or planned fire sprinkler water distribution pattern, or possibly delay the activation of the fire sprinkler or fire detection system. Consult a fire protection engineer, NFPA 13, and local codes for guidance on the proper installation techniques.

ASTM E1264 Classification
Type XII, Form E

Acoustical Performance
SoundScapes Shapes offer excellent sound absorption. They provide greater sound absorption than a continuous ceiling of the same area because sound is absorbed from front and back surfaces. Color shapes have slightly reduced acoustical performance. See data page CS-3867 for details.

Seismic Restraint*
The International Building Code allows architectural components to swing freely as long as they will not be damaged or cause damage. Shapes suspended individually with aircraft cable will swing no more than 18” in any direction for each panel. Shapes direct attached to drywall or suspended in group systems have been engineered for application in all seismic areas.

* Pendulum reaction information is based on full scale testing and computer modeling conducted at the Structural Engineering Earthquake Simulation Lab located at the State University of New York at Buffalo.

Recommended Suspension Systems
SoundScapes Shapes are pre-assembled with metal extrusions in the back of the panels. Standard accessory kits facilitate quick and easy installation from the deck, through a ceiling or directly attached to drywall. See Installation Instructions LA-297302 for installation details.

Warranty
One (1) year limited warranty. Details: armstrong.com/warranty.